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New Claims

1. A filter cartridge for filtering a slurry composition which comprises

a hollow housing (12) having a first end including an inlet (24) and a second end including an outlet (25), said hollow housing (12) being filled with a depth filter (28) and being free of an open void volume upstream of said depth filter (28).

2. The filter cartridge of claim 1 wherein said depth filter is formed of segments (28), preferably separated by annular spacers (27).

3. The filter cartridge of claim 2 wherein said depth filter segments (28) comprise a wound depth filter comprising nonwoven fibers.

4. The filter cartridge of claim 2 wherein said depth filter segments comprise a stack of sheets (28) wherein each sheet (28) comprises nonwoven fibers.

5. The filter cartridge of claim 2 wherein said depth filter segments (28) comprise a fibrous mass of nonwoven polymeric fibers secured together by mechanical entanglement of the fibers.

6. The filter cartridge of claims 2 to 5 wherein the ratio of depth filter segment thickness to spacer thickness is from about 1.1:1 to about 5:1.

7. The filter cartridge of claim 6 wherein the ratio of depth filter segment thickness to spacer thickness is from about 1.5:1 to about 3:1.

8. The filter cartridge of any one of claims 1 to 7 wherein the housing (12) is free of an open void volume downstream of said depth filter (28).

9. The filter cartridge of any one of claims 1 to 8 wherein the depth filter (28) inserted into the housing (12) is precompressed into its final length.

10. The filter cartridge of any one of claims 1 to 9 further comprising end caps (14,16;50,51;70;90) secured to the ends of the housing (12;73;93) by a mechanical device.

11. The filter cartridge of claim 10 wherein the inner walls of the housing (12;73) adjacent the ends of the housing (12;73) have one or more slots formed therein, the end caps (14,16;50,51;70) contain one or more C-rings (52;74) and the C-rings (52;74) secure the end caps (14,16;50,51;70) to the housing (12;73) by fitting at least partially into the one or more slots of the housing (14,16;50,51;70).

12. The filter cartridge of claim 10 wherein the outer walls of the housing (93) adjacent the ends of the housing (93) have a flange (94) formed thereon and the end caps (90) are secured to the flange (94) by a C-ring (95).

13. The filter cartridge of claim 11 or 12 wherein the end caps (70;90) are formed of two or more pieces known as the inner end cap piece (71;91;102;112) and outer end cap piece (72;92;104;110) and at least the inner end cap piece (71;91;102;112) is secured by said to said housing.

14. The filter cartridge of claim 13 wherein the outer end cap piece (72;92;104;110) is secured to the inner cap piece (71;91;102;112).

15. The filter cartridge of any one of the preceding claims wherein the media has a surface treatment selected from the group consisting of hydrophobicity, hydrophilicity or a positive or negative charge.

16. A process for filtering a slurry which comprises

passing a slurry through a filter cartridge as defined in any one of claims 1 to 15, and

recovering a filtered slurry from said cartridge.

17. The process of claim 16 wherein said slurry is selected from the group consisting of a silica-based slurry, an alumina-based slurry, a ceria-based slurry, a diamond-based slurry, a MnO_2- based slurry, a cell broth, a photoresist chemical, a fermentation liquid, blood, a blood fraction and a transgenic liquid.

18. The process of claim 16 wherein said slurry is transgenic milk.